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## Display of the Magnificent Rifle Bird.

LEE S. CRANDALL

*Curator of Birds*  
*New York Zoological Park*

&amp;

CLAUDE W. LEISTER.

*Curator of Educational Activities*  
*New York Zoological Park*

(Text-figure 1).

Although in captivity for over a year, our Magnificent Rifle Bird (*Craspedophora magna intercedens*) has not been observed in display until a month previous to this writing (October 25, 1937). The authors have seen the display performances of fifteen species of the *Paradisaeidae* and agree that this species, through its use of a markedly different method of execution, achieves an astounding, unexpected result, the most magnificent display so far observed for the entire group. Without any particular preparation the full display is entered into almost instantly, and whereas the long-plumed birds of paradise usually present an aesthetic, gentle waving of these pleasingly-colored plumes, here we have something entirely different, a decidedly virile display.

The display of the rifle bird has been adequately described by Selous.<sup>1</sup> After viewing the display, as given dozens of times, it is evident that a certain amount of variation can enter without materially changing the character of the performance. It is, therefore, deemed advisable to record the display as observed at the New York Zoological Park, calling attention to apparent discrepancies in or deviations from Selous' account.

After the first-observed display of our Rifle Bird, hours were spent awaiting subsequent performances. A week or more went by and we were unable to observe satisfactorily a complete display. Finally, a mounted female was borrowed from The American Museum of Natural History and placed just outside of the cage occupied by our male bird. The response was immediate and we (or, more strictly speaking, the stuffed female), were presented with a half-dozen displays in forty minutes.

There are but few preliminaries at the most, for while the bird occasionally precedes a display with characteristic vertical extensions of the head and neck, or a feigned indifference, as evidenced by active preening and pecking of the feet, just as frequently a full display is achieved without any preliminary actions whatsoever. Whatever the procedure, the observer is always taken by surprise.

<sup>1</sup> Selous, Edmund C. *Realities of Bird Life*, 1927, p. 284-285.

There are two forms of the display, a long one and a short one. The short display was noted several times previous to the introduction of the stuffed female. Afterward, the long display was in vogue.

#### THE SHORT FORM OF THE DISPLAY.

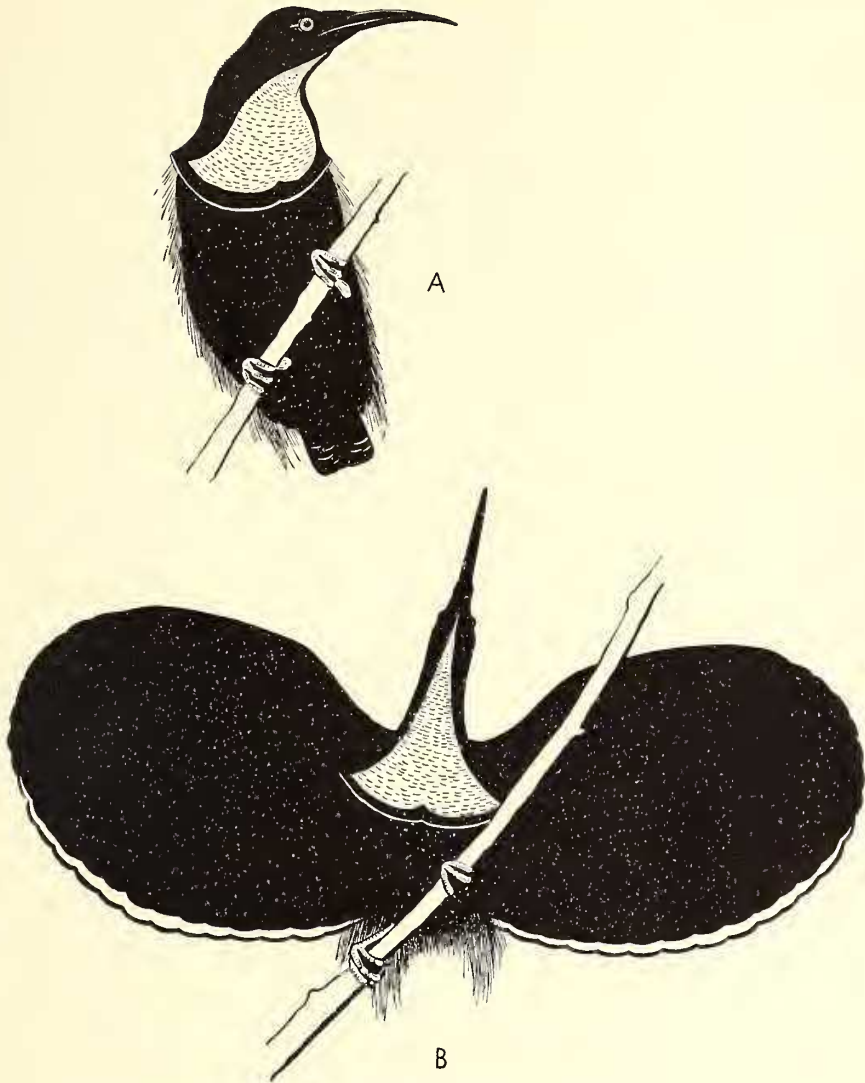
The bird enters into either form of the display while sitting upright upon a slightly ascending branch. Frequently the display is preceded by a few abrupt, jerky, vertical movements of the head and neck. With this slight warning the wings are then thrown slightly forward and opened wide, to their fullest extent. Simultaneously, the neck is extended and the head moved to one side and brought to rest just behind the bend of the outstretched wing. The head is then moved from side to side, first in a period of about two seconds but immediately and regularly increased in speed until brought to an abrupt stop in the middle after about a dozen movements. This is a remarkably rhythmic performance and the last few movements are executed with such rapidity that it is practically impossible to determine their extent. Apparently they become shorter as the speed is increased. As the head movements cease the wings are folded and the display ended.

#### THE LONG FORM OF THE DISPLAY.

At the start of the display the wings are usually opened so abruptly as to produce a rustling "plop." As the head is being moved from one side to the other the bird rises on his perch and slightly elevates (thereby relaxing) the extended wings. Simultaneously, as the head reaches the opposite side, the body is lowered on the perch and the wings are snapped back to their fully-extended position. This again produces a sharp, rustling sound which is, of course, repeated with every similar movement of the wings, throughout the performance. All these movements are repeated in unison, again and again. The wings-extended-head-to-the-side position for the first few movements is held rigidly for about three seconds. The time of movement then decreases to about three-quarters of a second and is maintained to the end of the display. During the longest and most regularly-executed of the displays observed the head was moved from side to side thirty-five times, punctuated, in perfect rhythm, by the rustling snap of the extended wings. No two displays are exactly alike, for they are varied by changing the regular, rhythmic beat of these coordinated movements. Action may be slowed down for a few seconds, then speeded up to the original beat. It has also been noted that at times, as the bird rises and falls on his perch, he may move up or down the perch but this appears to be due rather to incidental relaxing of the grip than to a definite dance motive.

Tail and plumes seem to play no important part in the performance. During the display the tail is held up in the rear in a fairly horizontal position. While it may be spread a trifle and moved slightly from side to side, such movements apparently serve only to assist the bird in maintaining his balance. The plumes extend around and below the body and serve principally to obscure its junction with the extended wings.

The foregoing merely describes the action of the display and gives but little indication of the remarkable effect secured. The observer is completely taken by surprise when, directly in front of him, the wings of the Rifle Bird are suddenly extended to form a dark concavity, the black inner surface of primaries and secondaries meeting perfectly, with no visible break, to their very tips. Then, too, because of the shortened outer primaries, the shape of the extended wings is unusual, almost bat-like but more symmetrical and graceful. In contrast to this velvety background-drop the scintillating green gorget now moves rapidly from side to side. The observer's



Text-figure 1.

Magnificent Rifle Bird (*Craspedophora magnifica intercedens*). **A.** Normal pose.  
**B.** Attitude at end of short form of display, just before wings are closed.  
 Drawings by Joel Stolper.

eye is riveted to this oscillating dart of glowing green, so much so that he can see little else, and the display must be watched over and over again before he is able to note the other actions involved.

The effectiveness of the display seems to be dependent upon the quality and amount of light. The colors of the gorget are a more brilliant green on a dull, cloudy day and are set off to better advantage against the velvety black of wings and body. On a bright, sunshiny day the gorget does not appear to be green at all, but blue, and on such days the display is less striking. A small area on the inner tips of the flight feathers has a peculiar

glazed appearance and under certain light conditions reflects a light blue-green color. During the display a band of this color is thus shown along the lower edge of the deep black of the extended wings. This color area is indicated in the accompanying drawing.

Voice seems to pay no part in the display and, unlike Selous, we have never heard a vocal sound during dozens of closely-observed displays. We have never noted the mouth to be held open, and in this species the brightly colored lining of the buccal cavity would seem to possess no significance in connection with courtship display.

Between display periods our Rifle Bird frequently utters his loud call notes and likewise a pleasing, low-pitched version of the same, almost conversational in tone. While it has been stated that the call notes are never uttered more than a few times in succession, our bird has called a dozen times without a break.